NWS FORM E-5 (11-88) (PRES. by NWS Instruction 10-924)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE

HYDROLOGIC SERVICE AREA (HSA)
WFO Jackson, Mississippi

MONTHLY REPORT OF HYDROLOGIC CONDITIONS

REPORT FOR:
MONTH: **September** YEAR: **2009**

TO: Hydrometeorological Information Center, W/OH2
NOAA / National Weather Service
1325 East West Highway, Room 7230
Silver Spring, MD 20910-3283

SIGNATURE
Alan E. Gerard, Meteorologist In-Charge

DATE
10/21/2009

When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924)

☐ **An X inside this box indicates that no river flooding occurred within this hydrologic service area.**

Synopsis...

September, generally one of the Hydrological Service Area's (HSA) driest months, was uncharacteristically wet. Above normal rainfall continued into September from the month of August for all areas north of Interstate 20. With the exception of southern portions of Northeast Louisiana, extreme Southwest Mississippi, and a portion of Simpson and Smith Counties in Central Mississippi, counties and parishes south of I-20 also had above normal rainfall.

The month of September opened under the influence of relatively cool, dry high pressure. A weak inverted low pressure trough pushed slowly across the region bringing some scattered showers on the 2nd and 3rd to mainly East Central Mississippi and North Mississippi. Rainfall was less than 0.50 inches. Southerly flow brought an abundance of moist air into the area on the 4th and 5th. Through the 9th, Showers and thunderstorms developed due to the interaction between a series of upper level disturbances, afternoon heating, and abundant moisture. Rainfall was generally 0.50 inches or less; however, some heavier thunderstorms produced 2.00 to 3.00 inches over South Mississippi. On the 7th, rainfall was limited to Southeast Mississippi. Rainfall was isolated to scattered over the entire HSA from the 8th to 10th. Rainfall totals were generally less than an inch with some areas receiving up to 2.00 inches where thunderstorms occurred.

On the 11th, an upper level low pressure center stalled over Texas as an upper level and surface high pressure strengthened over the Southeast U.S. A surface low pressure center developed along the Upper Texas Coast on the 12th into the 13th, with a front anchored near the Louisiana Coast. Unable to move east, the low pressure center meandered around the state of Louisiana through the 19th leaving a series of frontal boundaries slowly moving back and forth across the HSA. Rainfall was heaviest during the period from Ashley County, Arkansas to Grenada County, Mississippi. This area received from 4.00 to 8.00 inches. Northeastern portions of the HSA received from 3.00 to 6.00 inches of rainfall. Southwest Mississippi and Southern portions of Northeast Louisiana received the least amount of rainfall, ranging from 1.00 to 3.00 inches. The remainder of the area

received from 1.50 to 4.00 inches. Some heavier 24 hour totals ending at 7am: 4.60 inches at Eudora, AR (16th); 3.50 inches at Crossett, AR (13th); 3.28 inches at Bastrop, LA (15th;); 2.90 inches at Grenada, MS (17th); 2.54 inches at Cleveland, MS (18th); and 2.53 inches at Tibbee, MS (16th). An upper level trough developed to the west of the HSA on the 20th and began slowly pushing to the east. This allowed the surface low pressure center to move north-northeast and by the morning of the 21st was over the Great Lakes. The upper level trough remained west of the HSA. Abundant moisture and disturbances in the southwest flow over the region continued the threat of heavy rainfall. Heavy rainfall occurred on the 20th and 21st across the northeast portions of the HSA. From 2.00 to 6.00 inches occurred over portions of this area. At Dekalb, MS, 5.88 inches of rainfall fell on the 21st. From the 22nd until the 24th, stubborn high pressure stationed once again over the Southeast U.S. did not allow the upper level trough to progress any further eastward. The associated surface front moved to the Mississippi River on the 23rd and also stalled until the 24th. Moderate to heavy rainfall fell on the 22nd into the 23rd mainly east of the Mississippi River where amounts ranged from 0.50 to 3.00 inches. Some heavier 24 hour rainfall totals ending at 7am from the 20th to 23rd: 4.52 inches at Philadelphia, MS (23rd); 3.15 inches at Satartia, MS (22nd); and 2.70 inches at Walnut Grove, MS (23rd).

On the 24th, the front finally resumed its slow eastward movement, but once again stalled. This time the front stalled in Southeast Mississippi where it remained until midday on the 26th. Most of the rainfall during this time fell over Mississippi where 0.50 to 2.00 inches occurred. The front finally cleared the HSA late on the 26th allowing high pressure from the Gulf of Mexico to control the weather.

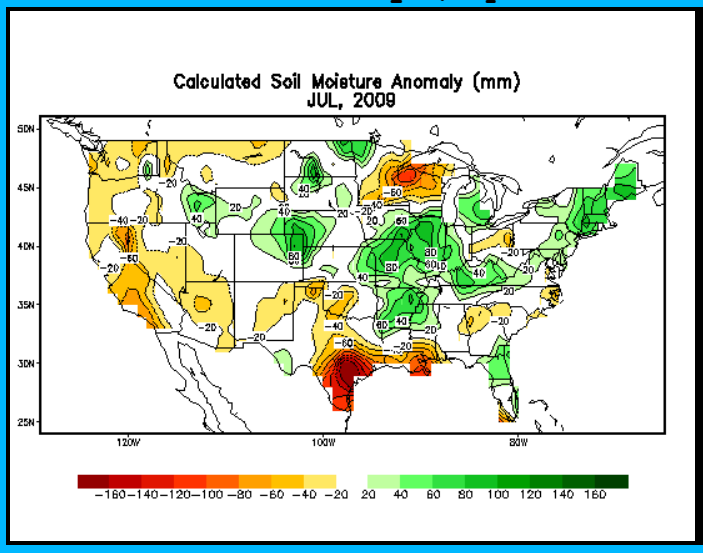
However, by the 28th, a fast moving cold front moved rapidly from the north across the region and into the Gulf by the morning of the 29th. Cooler and drier air pushed into the HSA through the end of the month.

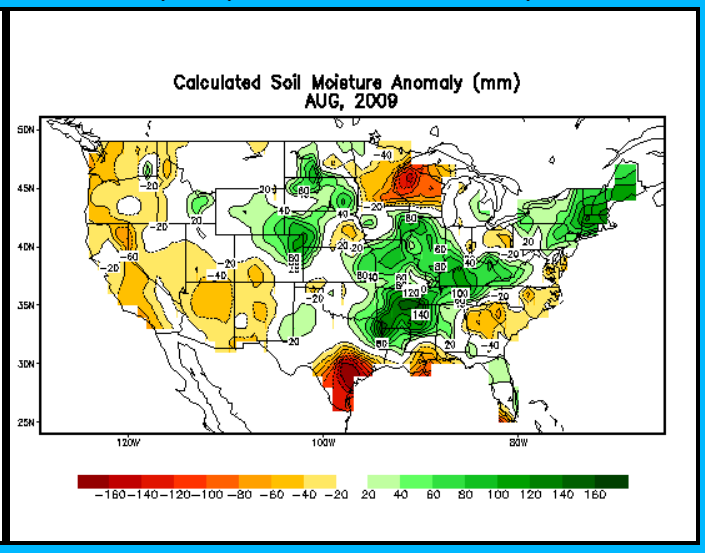
River and Soil Conditions...

Rainfall was 200 to 500 percent of normal over Southeast Arkansas, the northwestern portions of Northeast Louisiana, and North and East Mississippi. With the exception of extreme Southwest Mississippi, Central and South Mississippi had rainfall totals from near normal to over 300 percent of normal. Rainfall was 50 to 75 percent of normal for extreme Southwest Mississippi, Northeast Louisiana south of I-20 and over portions of Simpson and Smith Counties in Central Mississippi.

Soil moisture for the month was 3.00 to 6.00 inches above normal along and north of I-20. Soil moisture was near normal to 3.00 inches above normal from the Highway 84 corridor to I-20. Soil moisture over all areas south of Highway 84 was at or just below normal.

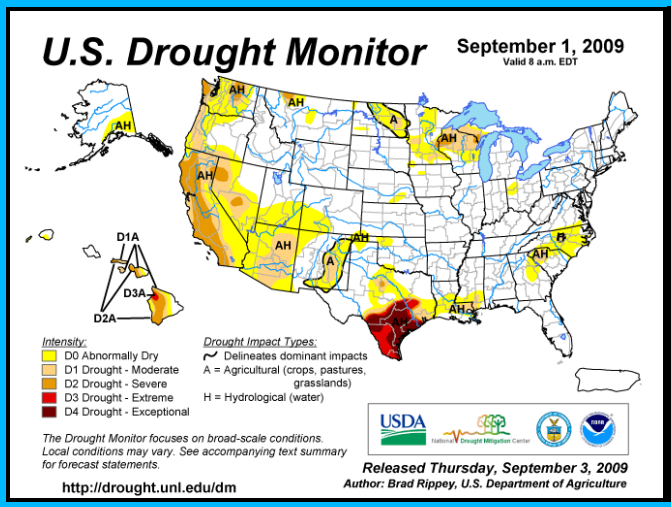
Soil Moisture anomaly (departure from normal): (25.4mm = 1 inch)

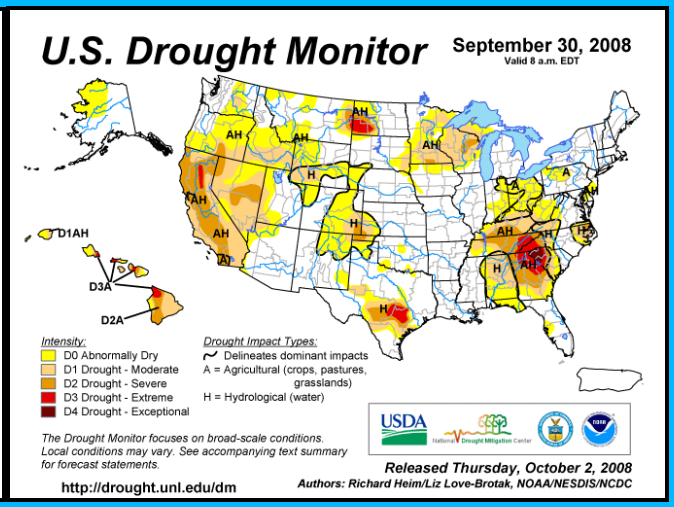




July Anomaly **August Anomaly**

A comparison of the September 1st U.S. Drought Monitor to the September 30th Drought Monitor indicated that rainfall during the month removed abnormally dry and drought conditions from the HSA.





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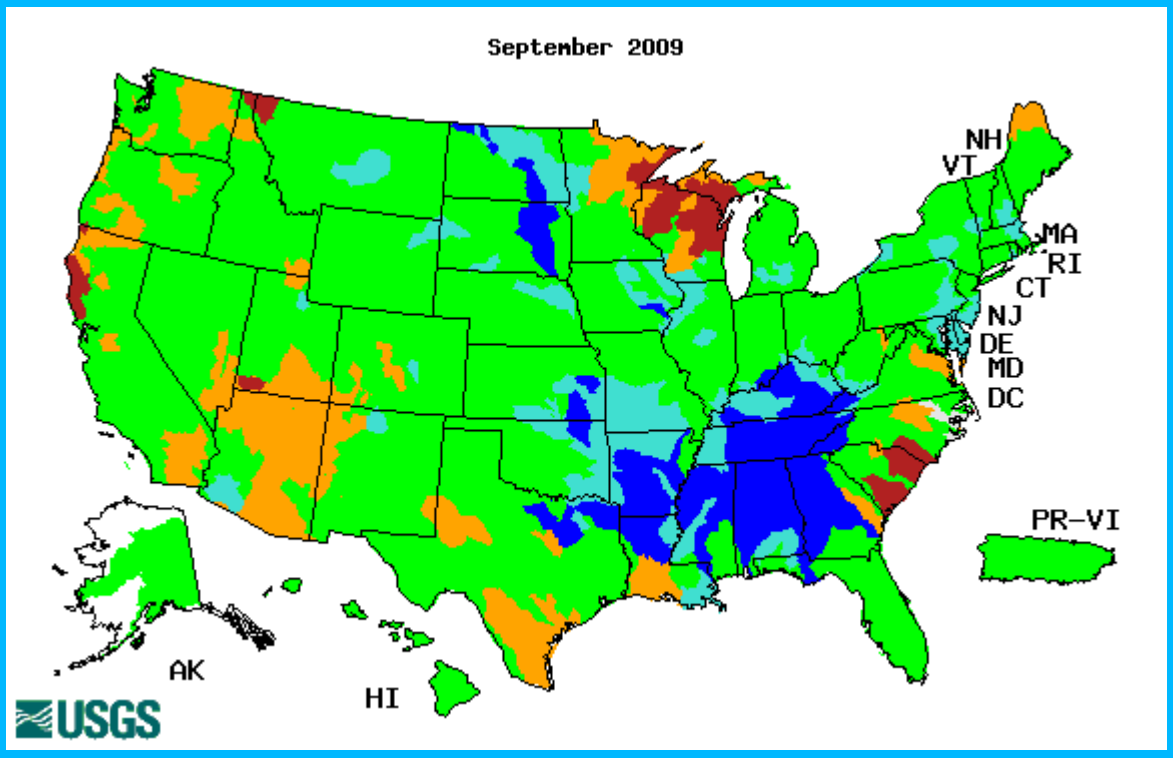
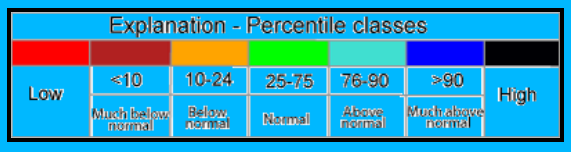
September 1st, 2009 **September 30th, 2009**

The United States Geological Survey's (USGS) September 2009 river streamflow records were compared with all historical September streamflow records. Streamflow was above normal to much above normal along all river systems except the Pascagoula River System (includes the Chickasawhay and Leaf Rivers) which had normal streamflow.





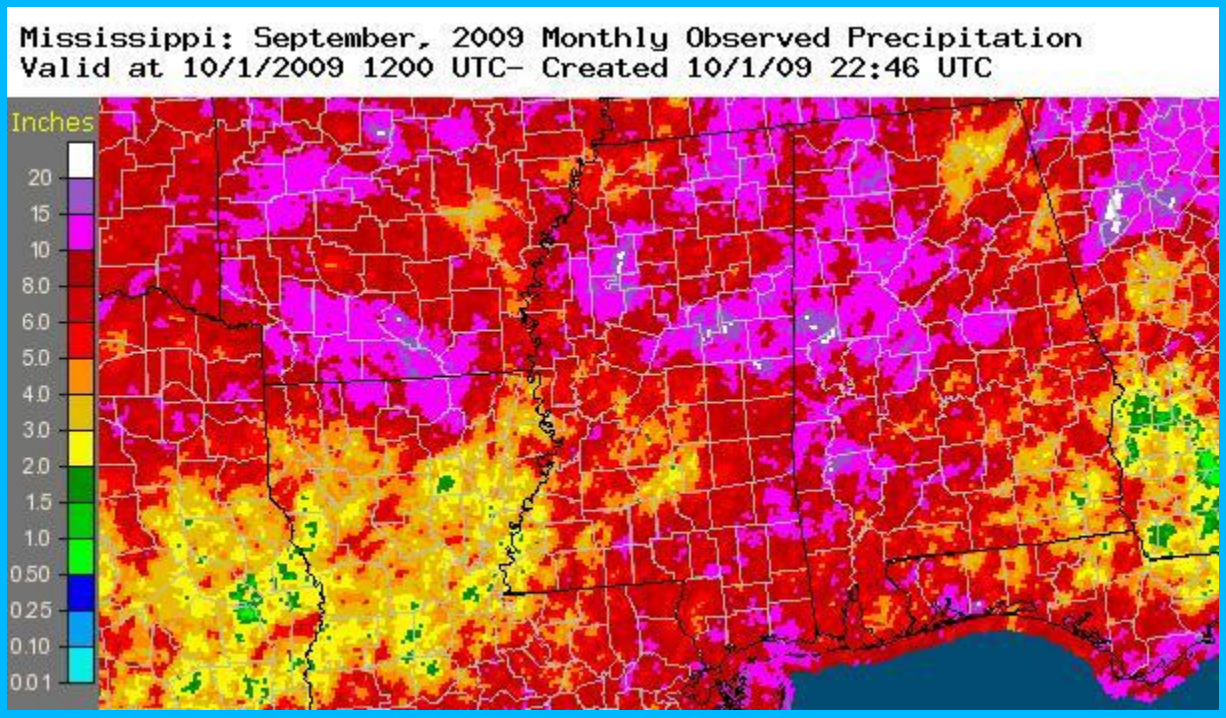
Minor flooding occurred on the following rivers: Upper Pearl, Yockanookany, Upper Big Black, Upper Sunflower, and the Noxubee. Minor to moderate rises occurred on most rivers along and north of I-20 and only minor rises occurred on rivers elsewhere.

Based on current soil moisture conditions, current streamflow conditions, and a normal rainfall forecast over the HSA during the next 60 to 90 days:

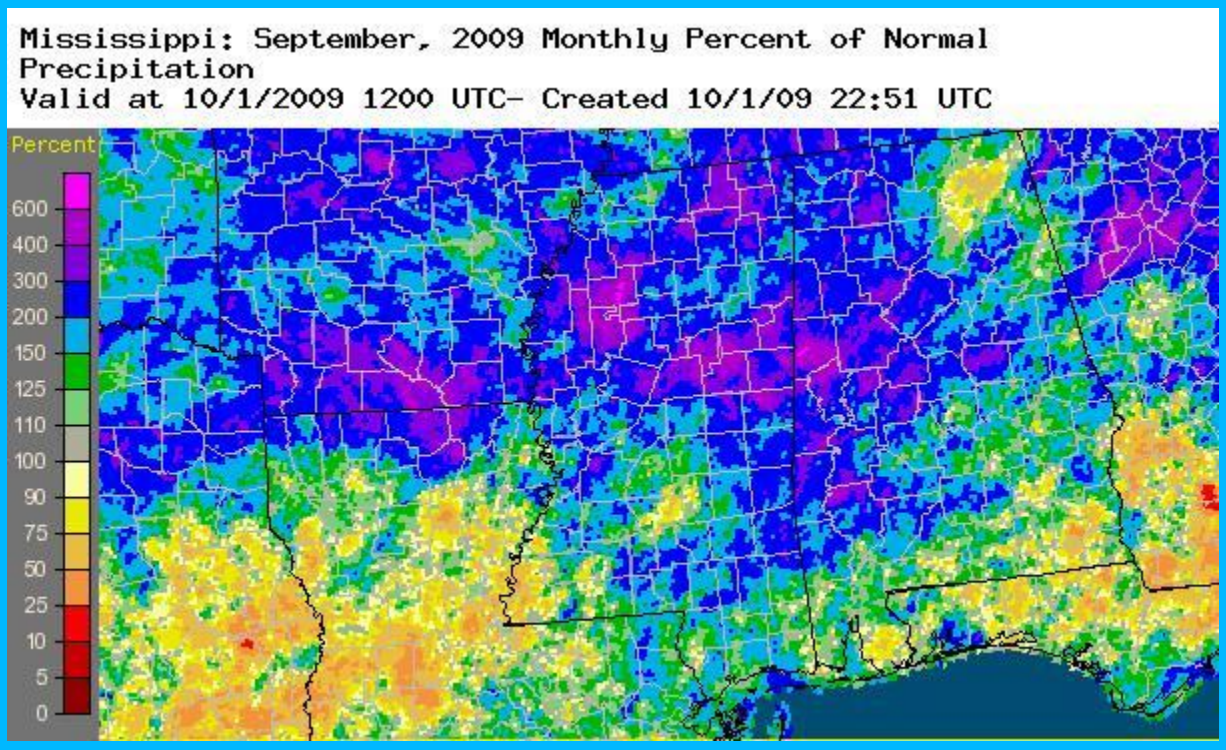
Pearl River System:	Above normal flood potential.
Yazoo River System:	Above normal flood potential.
Big Black River System:	Above normal flood potential.
Homochitto River System:	Normal flood potential.
Pascagoula River System:	Normal flood potential.
Northeast LA and Southeast AR:	Above normal flood potential.
Tombigbee River System:	Above normal flood potential.

Rainfall for the month of September

The largest rainfall amounts in the HSA from NWS Cooperative Observer reports during the period from 7 am on August 31st until 7 am on September 30th were: 17.19 inches at Louisville, MS; 13.63 inches at Dekalb, MS; 13.05 inches at Ackerman, MS; 12.41 inches at Crossett, AR; 11.65 inches at Bluff Lake, MS; 11.35 inches at Pat Harrison Waterway's Archusa Waterpark, MS; 11.31 inches at Kosciusko, MS; 11.04 inches at Starkville, MS; 10.91 inches at Moorehead, MS; 10.68 inches at Eudora, AR; and 10.40 inches at Vaiden, MS.



September 2009 Rainfall Estimates



September 2009 Percent of Normal Rainfall Estimates

Note: Observer rainfall and MPE may differ due to time differences.

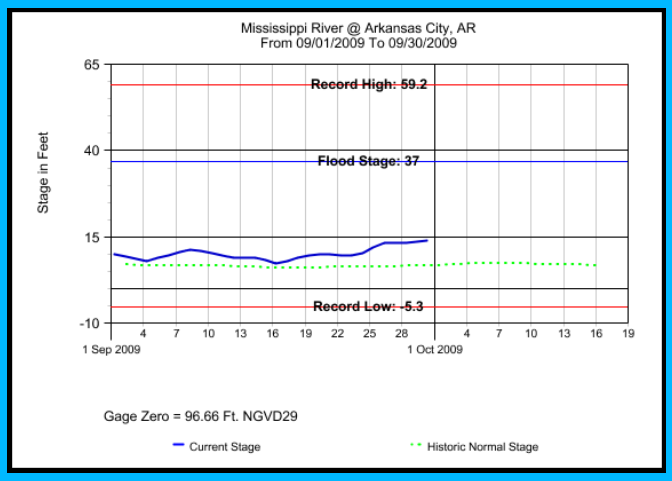
September rainfall for Selected Cities...

City (Airport)	September Rainfall	Departure from normal	2009 Rainfall	2009 Departure from Normal
Jackson, MS	4.33	+1.10	39.52	-2.63
Meridian, MS	9.32	+5.68	42.04	-3.07
Greenwood, MS	11.04	+7.79	50.54	+9.91
Greenville, MS	8.40	+5.66	48.20	+1.24
Hattiesburg, MS	5.92	+1.66	42.92	-5.44
Vicksburg, MS	2.49	-0.67	39.28	+0.36

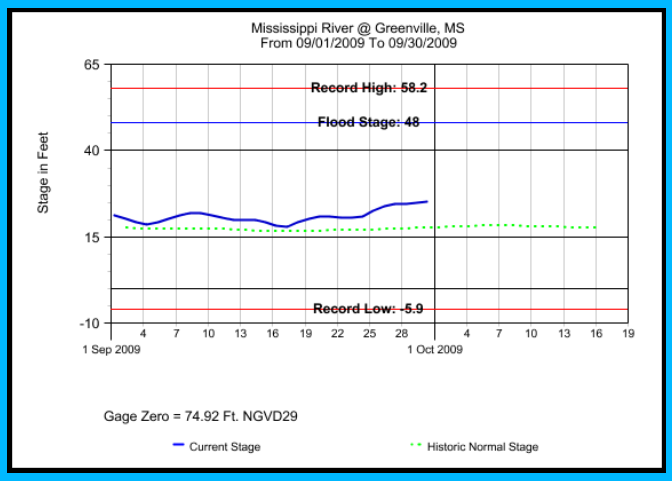
Mississippi River...

Mississippi River Plots for September, 2009

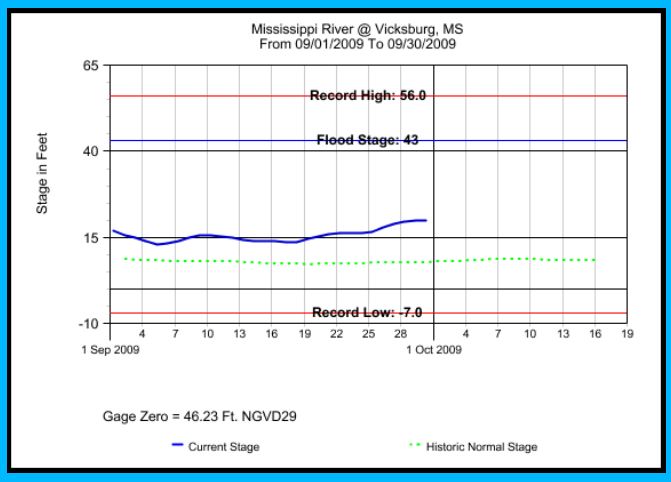
Plots Courtesy of the United States Army Corps of Engineers



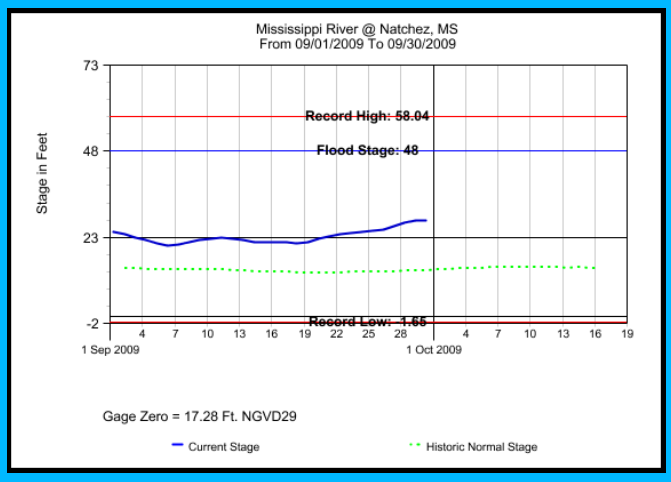
Arkansas, MS



Greenville, MS



Vicksburg, MS



Natchez, MS

Preliminary high and low stages for the month:

Location	FS	High Stage(ft)	Date	Low Stage(ft)	Date
Arkansas City, AR	37	14.18	09/30/09	7.16	09/16/09
Greenville, MS	48	25.34	09/30/09	17.85	09/16/09
Vicksburg, MS	43	20.00	09/30/09	12.97	09/05/09

Natchez, MS	48	28.10	09/30/09	20.67	09/06/09

Total Flood Warning products issued: 11
Total Flood Statement products issued: 72
Daily Rainfall Products (RRA'S) issued: 30
Daily River Forecast Products (RVS'S) issued: 30
Daily River Stage products (RVA'S) issued: 30

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&

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Note: Provisional stage and precipitation data were furnished with the cooperation of the Mississippi, Louisiana, and Arkansas National Weather Service Cooperative Observer Programs, United States Geological Survey (USGS), United States Army Corps of Engineers (USACE), Pearl River Valley Water Supply District (PRVWSD), Pat Harrison Waterway District, Pearl River Basin Development District, and the Mississippi Department of Environmental Quality.

cc: USGS Little Rock District
USGS Ruston District
USACE Mobile District
USACE Vicksburg District
USACE Mississippi Valley Division
USGS Mississippi District
SRH Climate, Weather and Water Division
Lower Mississippi River Forecast Center
Pearl River Valley Water Supply District
Hydrologic Information Center
Southern Region Climate Center
Pat Harrison Waterway District
Pearl River Basin Development District